(21)What will be output when you compile and execute the following code?

```
void main(){
   char *ptr="*****";
   int i,j;
   clrscr();
   for(i=0;i<10;i++){
     if(i<6)
     printf("%*.*s\n",5,i,ptr);
     else
     printf("%*.*s\n",5,10-i,ptr);
   }

   getch();
}
```

(22)What will be output when you compile and execute the following code?

```
void main(){
   char *ptr="*****";
   int i,j;
   clrscr();
   for(i=1;i<10;i++){
     if(i<6)
```

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```
      printf("%*.*s\n",0,i,ptr);
      else
      printf("%*.*s\n",0,10-i,ptr);
   }

   getch();
}
```

(23)What will be output when you compile and execute the following code?

```
void main(){
   char *ptr="**********";
   int i,j;
   clrscr();
   for(i=0;i<11;i++){
     if(i<5)
        printf("%*.*s\n",5+i,2*i+1,ptr);
     else
     {
        if(i==7)
        {
           *(ptr+3)=' ';
           *(ptr+4)=' ';
           *(ptr+5)=' ';
```

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```
        }
        printf("%*.*s\n",9,9,ptr);
    }
  }

  getch();
}
```

What will be output of following program?

```
void main()
{
        char str[8]=”world”;
        printf(“%10s\n”,str);
        printf(“%-10s\n”,str);
        printf(“%2s\n”,str);
        printf(“%-2s\n”,str);
        printf(“%(-10)s\n”,str);
        printf(“%-(-10)s\n”,str);
        printf(“%+10s\n”,str);
        getch();
```

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```
}
```

What will be output of following program?

```
void main()
{
        short int a=-85;
        printf("%-10d\n",a);
        printf("%+10d\n",a);
        printf("%010d,%+010d,%-010d\n",a,a,a);
        printf("%o  %#o\n",a,a);
        printf("%#x %X\n",a,a);
        printf("%.0f  %#.0f",9.0f,9.0f);
        getch();

}
```

Output:

. precision

Case 1: if data type of data is string: precision is +ve integer which indicate how many character in the string will be printed. If precision is larger than length of data whole string will be printed.

e.g.

What will be output of following program?

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```
void main()
{
        char str[8]=”world”;
        printf(“%10.2s\n”,str);
        printf(“%10.8s\n”,str);
        printf(“%10.-4s\n”,str);
        getch();
}
```

Output:

Case 2: If data type of data is fractional (float, double, long double): It indicates how many digits will be printed after decimal. If precision is less than number of digits after decimal point in data then rounded value will be printed.

e.g.

What will be output of following program?

```
void main()
{
        float a=4.5446;
        printf(“%10.5f\n”,a);
        printf(“%10.3f\n”,a);
        printf(“%.4f\n”,a);
        getch();
}
```


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Output:

Case 3: If data type of data is integer: It will that number of zero before the data.

(Total no. of zero=precision-length of data)

e.g.

What will be output of following program?

```
void main()
{
    int a=45;
    printf("%10.5d\n",a);
    printf("%4.3d\n",a);
    printf("%.0d\n",a);
    getch();
}
```

Output:

Case 4: if data type of data is character: In case of char data type char has no meaning.

Note: In place of width and precision we can write * symbol which get values from arguments in printf function

What will be output of following program?

```
#include
#include
void main()
```


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```
{
        char *str="**********";
        int i;
        clrscr();
        for(i=0;i<=10;i++)
                printf("%*.*s\n",20,i,str);
        getch();
}
```

Output:

```
         *
        **
       ***
```

modifier:

h: for short integer

l: for long integer or double

L:long double

Type:

d: to print decimal integer e.g. 5,-5

i: to print decimal integer e.g. 5,-4

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u : to print unsigned decimal integer e.g. 5

o: to print octal integer e.g. 05

x: to print hexadecimal integer e.g. ox5 (x will be in small letter)

X: to print hexadecimal integer e.g. oX5 (x will be in capital letter)

c: to print character e.g. '5'

s: to print string e.g. "5"

f: to print float number in this format n.ffffff e.g. 5.000000

e: to print float number in this format n.ffffffe+or -xx e.g. 5.000000e+01 (e will be in small letter)

E: to print float number in this format n.ffffff E+ or -xx e.g. 5.000000E-01 (e will be in capital letter)

g: same as e if xx<-4 or xx>4 else same as f e.g. 5,-5e-3

G: same as E xx<-4 or xx>4 else same as f e.g. 5,-5E3

p: to print the segment address of pointer variable in hexadecimal integer e.g. 12a0

Fp: to print segment and offset address in hexadecimal integer e.g. 0004:00a1

Type 2:

Syntax: \x

Where x must be one of the following

a: to produce a sound(bell),ascii value=7

b: to shift one space back(back space) ,ascii value=8

t: to shift zero to seven space forward (horizontal tab) ,ascii value=9

n: to print data in new line(new line) ,ascii value=10

v: use in printer for vertical tab(vertical tab) ,ascii value=11

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f: use in printer to come first position(from feed) ,ascii value=12

r: shift the cursor to first position(carriage return) ,ascii value=13

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